

REMARKS/ARGUMENTS

In response to the Office Action dated August 24, 2005, claims 1 and 13 are amended, and claims 6 and 8 are canceled. Claims 1-5, 7 and 9-13 are now active in this application. No new matter has been added. Claims 14 and 15 are withdrawn as being directed to a non-elected invention.

INCORRECT LABELING ON PTO-892

It is noted that USPN 811,136 to Eveland, is mislabeled on the PTO-892, as being to Jahn. Correction of this mislabeling is respectfully solicited.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 10, 12 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

With respect to claim 10, the Examiner considers the reference to specific symbols defined by JIS as being indefinite since the particular standard is subject to change, thus changing the scope of the claim. The Examiner suggests the actual shape be defined in the claim rather than relying on a standard.

The rejection of claim 10 is respectfully traversed.

The scope of a patent claim is determined *as of the date of filing the application*. In this regard, a definite JIS standard with respect to symbols A and F was in effect at the time of filing the present application. Consequently, even if the JIS standard with respect to symbols A and F changes after the filing date of the present application, the JIS standard with respect to A and F at the time of the filing date of the present application will be used to determine the scope of claim

10, not the subsequent change JIS standard with respect to symbols A and F. Thus, an artisan would readily understand the metes and bounds of the invention recited in claim 10. Therefore, claim 10 is definite and it is respectfully urged that the rejection be withdrawn.

As to claim 12, depending from claim 1, the Examiner maintains that there is no antecedent support for “said roller holder portions”. However, in view of the amendment to claim 1, described below, “said roller holder portions” now has antecedent support in amended claim 1.

To address the objection that claim 13 does not properly further define the invention of the previous claim, claim 13 is amended to be in independent form and recite:

A thrust needle roller bearing used for a support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output shaft, wherein

the thrust needle roller bearing carries a thrust load generated by rotation of said input shaft or said output shaft, and said thrust needle roller bearing has needle rollers arranged in two rows,

said thrust needle roller bearing has a plurality of needle rollers and two annular cages, said two annular cages respectively have a plurality of pockets having a radial length slightly larger than that of said needle rollers, roller holder portions formed at said plurality of pockets respectively are structured to allow said two cages to hold said needle rollers therebetween in the direction from above and below, and said needle rollers are arranged in two rows in each of said plurality of pockets,

said two cages are caulked on both of the radially outermost end and the radially innermost end of said two cages, and a flat portion having a cross-sectional height lower than that of said roller holders is provided between a caulked portion produced by caulking of said two cages and corresponding ends of said needle rollers,

the radial length of the roller holder portions is smaller than the total radial length of the needle rollers in the two rows, and

the pockets where the needle rollers are placed each have an end located at the flat portion of the cages.

Consequently, in view of the amendment to claim 13, withdrawal of the rejection of claim 13 as being indefinite is respectfully solicited.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I. Claims 1, 2, 10, 11 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Winchell (USPN 2,854,300) in view of Eveland (USPN 811,136). The Examiner maintains that Winchell discloses substantially the support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output shaft and a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft. Eveland is relied upon as disclosing a thrust bearing having rollers arranged in two rows. The Examiner contends it would have been obvious to modify the needle roller arrangement of the thrust bearings of Winchell such that two rows are provided to permit them to revolve at different rates of speed.

II. Claims 1, 4, 5, 10, 11 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamaguchi (USPN 5,607,371) in view of Eveland. The Examiner maintains that Yamaguchi discloses substantially the support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output shaft and a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft. Eveland is again relied upon as disclosing a thrust bearing having rollers arranged in two rows.

III. Claims 1, 3, 10, 11 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Premiski et al. (DE 4040414) in view of Eveland. The Examiner maintains that Premiski et al. discloses substantially the support structure carrying a thrust load of a transmission having an input shaft with its rotation changed stepwise or continuously to be transmitted to an output shaft and a thrust needle roller bearing carries a thrust load generated by rotation of the input shaft or the output shaft. Eveland is again relied upon as disclosing a thrust bearing having rollers arranged in two rows.

IV. Claims 6-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Premiski et al., Yamaguchi, Winchell, individually, as applied to claim 1, and further in view of Winn (USPN 1,380,622), relied upon as disclosing an antifriction bearing in which the thrust needle roller bearing has a plurality of needle rollers and two annular cages (11, 12), the two cages respectively have a plurality of pockets having radial length slightly larger than the needle rollers, roller holder portions (13) formed at the plurality of pockets respectively are structured to allow the two cages to hold the needle rollers therebetween in the direction from above and below; one of the two cages is fixed to the other cage at both of the radially outermost end and the radically innermost end of the two cages (through tongues 6, 7), and a flat portion having a cross-section a height lower than that of the roller holders is provided (Figs. 6-8).

V. Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Premiski et al., Yamaguchi, Winchell, individually, in view of Winn, as applied to claim 6, and further in view of Mitchell (USPN 1,894,595), relied upon as disclosing a roller bearing assembly that utilizes welding to secure cage parts together.

VI. Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Premiski et al., Yamaguchi, Winchell, individually, as applied to claim 1, and further in view of Jahn (USPN 3,240,542), relied upon as disclosing a thrust roller bearing in which the roller holder portions have their corners rounded smoothly.

VII. To expedite prosecution, independent claim 1 is amended to recite all the limitations of claims 6 and 8, now cancelled, as well as:

the radial length of the roller holder portions (5a) is smaller than the total radial length of the needle rollers in the two rows, and

the pockets (5) where the needle rollers are placed each have an end located at the flat portion of the cages.

The features recited in original claims 6 and 8, and the above-recited features also added to amended claim 1 are supported by Figs. 2A to 2E (particularly Fig. 2C) and the relevant description in the specification of the present application.

It should be noted that claim 13 is similarly amended.

The features now recited in amended claims 1 and 13 are not disclosed or suggested by Premiski et al., Yamaguchi and Winchell. In particular, as recited in amended claims 1 and 13, the pockets where the rollers are placed each have an end located at the flat portion of the cages. Therefore, the flow of the lubricating oil at this end can be improved as compared with that at the roller holder portions. Accordingly, a sufficient amount of lubricating oil can be supplied, for example, between the rollers and races.

Neither Premiski et al., Yamaguchi, Winchell, Eveland, Winn, Mitchell, or Jahn, considered alone or in combination, discloses or suggests providing a flat portion between a caulked portion produced by caulking of the two cages and corresponding ends of said needle rollers, and then

having the pockets where the needle rollers are placed each have an end located at the flat portion of the cages.

Thus, amended independent claims 1 and 13, as well as dependent claims 2-5, 7, and 9-12, are patentable over Premiski et al., Yamaguchi, Winchell, Eveland, Winn, Mitchell, and Jahn. Consequently, the allowance of claims 1-5, 7 and 9-13, as amended, is respectfully solicited.

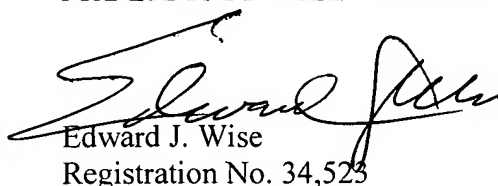
CONCLUSION

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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